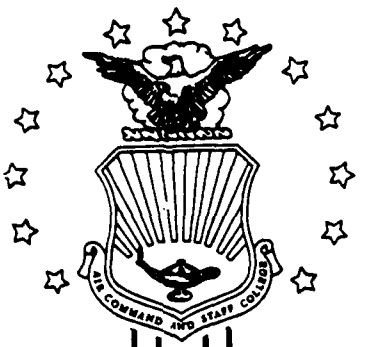

AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

EURO-NATO JOINT JET PILOT TRAINING

MAJOR DENNIS R. BELL 86-0250

"insights into tomorrow"

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The Euro-NATO Joint Jet Pilot Training (ENJJPT) program began in 1981 at Sheppard AFB, Texas. Since that time, over 300 instructor pilots have been assigned to the program. These instructors, representing 12 of the 15 NATO countries, arrive at Sheppard with a very limited knowledge of the nature of ENJJPT, the training they will face, or the facilities provided by the base and local community. This guide presents a condensed summary of the syllabi of instruction of both ENJJPT undergraduate pilot training and Pilot Instructor Training. It also provides a brief history of the program and an explanation of the command relationships governing the supervision of the 80th Flying Training Wing. A brief orientation to both the local civilian community and Sheppard AFB is also included.

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PREFACE

A major concern of our most senior military leaders has for years been the question of interoperability of our forces in the NATO alliance. Finally, in 1981, a major step was taken toward improving the situation and increasing standardization among the air forces of the NATO nations. The Euro-NATO Joint Jet Pilot Training program (ENJJPT) sprang into being at Sheppard AFB, Texas. The program involves members of 12 of the 15 NATO signatories and includes both international instructor pilots and students.

Most of the instructors arrive at Sheppard knowing very little of the specifics of the program, the training they will face, or the organization of the 80th Flying Training Wing. They are also unfamiliar with Sheppard Air Force Base, and know very little of the local civilian community.

This guide presents a brief explanation of these subjects. The information is drawn from multiple sources and includes the author's experiences and judgment as an ENJJPT instructor pilot and staff officer. The guide will be presented to newly arrived instructor pilot candidates, following approval by the 80th Flying Training Wing Commander and the Senior National Representatives of the participating countries. The format may change prior to publication to allow for updated material and photographs.

ABOUT THE AUTHOR

Major Dennis R. Bell is an experienced instructor pilot both in USAF undergraduate pilot training and in Euro-NATO Joint Jet Pilot Training. His first assignment to Air Training Command (ATC) was as an instructor pilot in the T-37 at Williams AFB, Arizona. He served as a line instructor and academic instructor teaching basic jet pilot training to US and Iranian student pilots. After a tour in the rated supplement as an air traffic controller and a tour as a C-12 instructor and flight examiner, he returned to ATC to serve with the ENJJPT program at Sheppard AFB, Texas. While at Sheppard he held positions as a T-38 line instructor pilot, flight commander, and Assistant Chief, Operations Division.

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Chapter One

INTRODUCTION

Even among the most experienced and travelled members of the military profession the process of reporting to a new job, a new aircraft, and a new duty station can be a very confusing and frustrating experience. So many questions arise:

What is my new job?
What kind of training do I face?
How is the unit organized?
Who do I work for?
What is the local civilian community like?

The moving process can be especially difficult when the move involves a tour of duty in a foreign country. For nearly half of the assigned members of the 80th Flying Training Wing this assignment is simply that--a tour of duty in a foreign country--the United States!

The Euro-NATO Joint Jet Pilot Training (ENJJPT) program is a unique combination of military aviators from 12 allied nations banded together to train pilots--future fighter pilots--for the NATO alliance. Most new arrivals know very little of life in the southwestern United States or of how the 80th Flying Training Wing accomplishes its mission.

This guide is intended to ease the transition to life at Sheppard Air Force Base and the Wichita Falls, Texas area for those pilots who will become instructors, and for their families. It is not intended to provide all the answers to the infinite array of questions and problems that can arise, but it will offer a concise overview of the ENJJPT program. Furthermore, it is not intended to be an exhaustive study. Other documents and pamphlets offered in sponsor packages and information booklets should be used in conjunction with this guide.

Specifically, this booklet offers an orientation to the local civilian community and the 80th Flying Training Wing organizational structure. It also summarizes both Pilot Instructor Training (PIT) and Undergraduate Pilot Training (UPT) programs. For those questions or problems that arise and are not covered in this guide, additional information and guidance can be obtained from your immediate supervisor, squadron commander, or Senior National Representative (SNR).

Chapter Two

SHEPPARD AIR FORCE BASE AND WICHITA FALLS LOCAL AREA

This chapter offers a description of both Sheppard Air Force Base and the Wichita Falls area. It will orient our newly assigned ENJJPT program members and their families with the environment in which they will work and live during their tour of duty in the United States.

Most new arrivals to the ENJJPT program are completely unfamiliar with both the host base and the surrounding civilian community. Many have heard stories of the occasional severe weather phenomena or of the Old West's Red River Valley. Although these subjects are interesting and do provide a glimpse of the North Texas environment and history, they do not offer a complete and accurate picture of the local area.

SHEPPARD AIR FORCE BASE

Located on the northeast side of Wichita Falls, Sheppard AFB is the home of Sheppard Technical Training Center, one of six major technical training facilities in the United States Air Force. Both officers and enlisted personnel undergo basic and advanced training in a host of specialties ranging from aircraft maintenance to computer information systems and health care sciences. Literally thousands of students and trainees process through Sheppard AFB every year on their way to operational units.

In addition to its technical training mission, Sheppard AFB also hosts the ENJJPT program and operates all airfield and base support activities. The 3750 Air Base Group supplies civil engineering, housing, police, personnel and finance offices, base operations, and airfield maintenance support.

Base Support Facilities and Services:

Base Exchange (BX). The BX offers a shopping plaza complex which houses the main store, Four Seasons Shop (toys, outdoor sporting goods, and lawn care products), a snack bar, watch repair, beauty shop, laundry/dry cleaning facility, portrait studio, and flower shop. In addition to the main complex, a new indoor Mini-Mall is located in the center of the enlisted dormitory area. It offers many of the same services as the main BX shopping plaza but on a smaller scale. The BX also operates a small "quick stop" grocery store and two automobile service stations.

Commissary. The base commissary is a modern, 81,000 square foot (7,525 square meters) grocery store boasting 12 check-out counters and well stocked shelves.

Banking Facilities. A full service federal credit union and a small branch of a local full service bank are located near the main BX complex for the convenience of all base personnel. Both provide typical checking and saving services, while the credit union also offers loans to qualifying members.

Child Care Center. A modern child care facility is provided on base for Sheppard families. It is equipped to care for children ranging from 6 weeks to 10 years of age. In addition, preschool classes are conducted for 3 to 5 year-olds.

Youth Center. The Youth Center provides a wide range of programs for children from 8 to 18 years of age. Several sports and instructional programs are conducted on base for the benefit of all Sheppard AFB dependents. (See Appendix 1)

Sports Facilities. Sheppard operates and maintains a top quality 18-hole golf course, two bowling alleys, several baseball and softball fields, tennis courts, swimming pools, and a large gymnasium complex. The Ladies Spa also offers many exercise and fitness programs for women.

Health Care Services. Shepard Regional Hospital is a modern, 155 bed hospital rendering full medical care for both military and dependent personnel. Besides Flight Surgeon services, the hospital provides obstetrical and gynecological care, member dental care, family practice clinics for dependents, and many other specialized clinics.

Arts and Crafts. Sheppard operates a large arts and crafts center which offers ceramics, leather work, upholstery, photography, and metal crafts. A modern auto hobby shop is also located on base. It provides computerized tune up equipment, a paint room, body repair facilities, welding equipment, and many other services. In addition, patrons may check out a wide variety of hand and power tools for use in the repair bays.

Clubs and Organizations. Several hobby and sport clubs are hosted by Sheppard organizations. A large Aero Club provides instruction and aircraft rental in several types of aircraft ranging from the Cessna 152 to the twin-engine Cessna 310. In addition, the Saddle Club offers boarding stalls, feed storage, and exercise areas for privately owned horses. The Bassmasters Fishing Club and the Longhorn Gun club also have meeting facilities on base.

WICHITA FALLS AND THE SURROUNDING AREA

The North Texas and Southern Oklahoma area surrounding Sheppard AFB and Wichita Falls is locally known as "Texoma." It is a remarkably attractive region consisting of relatively flat terrain supporting many farms and ranches. Natural and man-made lakes dot the countryside, many of which are quite large. Farming and oil production are the primary sources of income, while some light industry does exist.

Wichita Falls and the two smaller cities of Burkburnett and Iowa Park form what is known as the Tri City area. The population of the area is well over 100,000 people. Wichita Falls alone exceeds 90,000 and serves as the financial and retail center of the community.

The area climate is generally mild and appealing. Winter conditions seldom bring accumulations of snow, and the temperatures rarely remain below freezing for periods longer than a couple of weeks. Summer weather is warm and windy. Daytime highs often exceed 95 degrees Fahrenheit, but drop off quickly as the sun goes down. Severe weather, thunderstorms and tornadoes, do occur occasionally, but seldom cause significant damage. Rainfall amounts vary, but occur mainly in the winter and during thunderstorms in the spring and fall.

As in any reasonably sized metropolitan area, the Tri City area offers a large housing market. Several hundred homes are offered for sale or lease throughout the area. Prices of rentals range from $200 per month to well over $600 per month. The Housing Referral Office on base will gladly assist incoming families with their housing needs. Several local real estate companies also maintain extensive rental and lease listings for those interested.

Although Wichita Falls has a single unified school district, elementary schools and middle schools are liberally spread about the various neighborhoods in the city. Two large public high schools and a Catholic parochial school support the older school children. Furthermore, Midwestern State University in Wichita Falls offers a complete range of undergraduate and post graduate degree programs for those interested in pursuing higher education.

Recreation and entertainment facilities abound throughout the region. The area lakes offer excellent water sport opportunities including swimming, sunbathing, fishing, and water skiing. Camping and hiking have also been favorite pastimes of the international members of ENJJPT. Restaurants and cocktail clubs are scattered about offering a wide variety of menu and entertainment choices.

Two very large metropolitan areas lie within easy driving distance of Wichita Falls. Oklahoma City is roughly two and one-half hours to the northeast; Dallas and Fort Worth are only two and one-half hours to the southeast. Both of these large urban centers offer incredible arrays of entertainment, shopping, and recreational opportunities.

Probably the best feature of the entire region is its people. Wichita Falls citizens warmly welcome the military and fully support the ENJJPT program. Several local businesses and private citizens have adopted various Sheppard units. In some cases, specific nationalities of international military personnel have local sponsors. These sponsors host social engagements, provide help and assistance when needed, and generally try to make life easier and more fulfilling for the military member in the community. The local people, military and civilian alike, have a saying, "Wichita Falls--the best kept secret in Texas!"

After the newly assigned ENJJPT member arrives and settles his family, he will report to the 80th Flying Training Wing. His first few weeks of orientation and training in Pilot Instructor Training (PIT) are very busy indeed. A clear understanding of the mission and organization of the wing is often lost in the accelerated pace of the initial training. The following chapter presents a brief overview of the 80th Flying Training Wing, describing the history of the program, organizational structure, and command relationships.

Chapter Three

THE 80th FLYING TRAINING WING

The 80th Flying Training Wing is the heart of the ENJJPT program. It is organized much the same as any flying wing except that it is multinational in its membership, and the maintenance function is provided by a civilian contractor. In addition, the wing is a tenant unit on Sheppard Air Force Base. As such, it is not responsible for the more traditional housekeeping, security, and support functions. As previously mentioned, Sheppard Technical Training Center provides these services for all units on Sheppard AFB through the 3750th Air Base Group.

In order to gain a clear understanding of how the unit conducts its mission, it is necessary to briefly review the history of the ENJJPT program, and its organizational structure. This chapter provides a brief look at these subjects in an attempt to offer a better understanding of the entire ENJJPT program for its newly assigned personnel.

HISTORY OF ENJJPT

The concept began with an idea of a joint training program to standardize the NATO alliance and reduce the costs each nation was paying for undergraduate pilot training. In 1973, a working group was established to study the program's feasibility. This working group consisted of members representing the various NATO nations. The group finally concluded that the program was indeed feasible. In 1977, a United States offer to host ENJJPT was accepted.

After some discussion, Sheppard AFB was selected as the site for the new program. Sheppard AFB was no stranger to training allied pilots. It had previously hosted both the German Air Force (GAF) program, and the Military Assistance Program which trained Vietnamese and Laotian pilots. At the time of ENJJPT approval, the USAF fixed wing conversion program for helicopter pilots was also located at Sheppard.

Following a two year planning and development period the program was officially approved and formalized. In October of 1981, ENJJPT became a reality. Former US Senator John Tower provided the keynote address at the formal opening ceremony. All but three of the 15 NATO signatories participate in the program. The three non-participating nations are France, Iceland, and Luxemburg.

80th FTW INTERNAL ORGANIZATION

As previously mentioned, the wing is organized much like any other flying training wing. The Wing Commander has overall authority and responsibility for the conduct of the mission. Three flying squadrons are assigned, each with its own particular function. The 88th Flying Training Squadron (88 FTS) provides academic classrooms, instructors, and Military Training Officers (MTOs) for each section of students. The MTO is an instructor pilot whose primary functions are to conduct and monitor student officer and physical training, and provide a link between the academic and flying training portions of the program. The 88 FTS also conducts Pilot Instructor Training (PIT). The 89 FTS conducts T-37 undergraduate pilot training (UPT), while the 90 FTS conducts T-38 UPT.

The international flavor of the wing is preserved and maintained through the formal structure directed by the ENJJPT Plan of Operation (PO). This document, along with the Memorandum of Understanding (MOU) lays out responsibilities, specific guidelines of command and discipline, as well as designates national positions within the wing. For example, until the entire program comes up for review in 1991, the Wing Commander will be a US officer; the DO will be a German; and the Chief of the Operations Division will be a Norwegian. All other operational positions rotate to different nations on a predetermined basis. The support staff, consisting of the Resources Division, Wing Safety, Maintenance, and the US Headquarters Squadron, are all US positions.

Each nation supplies a Senior National Representative (SNR) who retains administrative and disciplinary authority over his nation's members. The SNRs also form a council which offers advice to the Wing Commander concerning matters of training philosophy or related subjects. The Wing Commander, however, retains complete operational control and makes all policy decisions.

The maintenance function, although monitored by USAF personnel, is provided by civilian contract maintenance. The contract is let out for bid to various firms and awarded periodically to the company that can provide the best service at the lowest overall price. The current contractor, Northrop Worldwide Aircraft Services, Inc., also provides maintenance services for another pilot training program at Vance AFB in Oklahoma. The support provided by the civilian maintenance organization has been excellent. The people are highly experienced and capable. In fact, the average experience level of the technicians is 17 years, while the average mechanic has 10 years in the business.

80th FTW COMMAND RELATIONSHIPS

The 80th FTW falls under a rather unusual chain of command structure. To begin with, the Wing Commander is responsible to the US Secretary of Defense through Headquarters Air Training Command (ATC) and Headquarters USAF. While this structure is the same as in any other ATC flying training wing, some other more complex relationships exist. The Wing Commander is also responsible for coordination and communication with the ENJJPT Steering Committee. The members of this group report directly to the Ministers of Defense of their respective countries. They, in essence, govern ENJJPT through policy guidance and funding authorizations. In addition to these relationships, one other chain exists.

The SNRs of each country also report directly to their Ministers of Defense. The SNRs then, may also convey high level communications directly to the Wing Commander. All of this means that although he is directly responsible to USAF authorities, the Wing Commander must necessarily balance the wishes and desires of all participants when making policy decisions.

SUMMARY

As one can easily see this is a complex organization with many unusual subtleties. Operational decisions are made through operational channels--flight, squadron, and wing. Administrative and disciplinary action can only be taken by a nation's SNR. Some leadership positions are specifically designated by nationality, while others rotate among the participants. Each nation makes inputs to the program via its SNR and Steering Committee member. The Wing Commander is not only responsible to US authorities but the Steering Committee as well. The key to success is obviously careful coordination and attention to detail.

Chapter Four

PILOT INSTRUCTOR TRAINING

The primary purpose of the program, as stated in the syllabus of instruction is, "to qualify rated pilots to perform the duties and assume the responsibilities of T-37/T-38 instructor pilots and training managers in accordance with the standards...." These standards are set forth in many USAF and ATC directives. As this statement implies, the process is a multifunctional training program designed not only to produce top quality instructor pilots, but also to provide PIT candidates with the skills to successfully manage and supervise the complete training program for undergraduate student pilots.

The course of instruction is a fast-paced and difficult one designed to challenge the abilities of even the best and most experienced pilots. Regardless of the aircraft to which a PIT trainee is assigned, the training program consists of over 70 hours of classroom academic subjects, over 25 hours of synthetic instrument trainer (link) missions, and at least 80 hours of flying instruction. Graduation is tentatively scheduled 19 weeks after training begins.

Evaluation of trainee progress is accomplished through a variety of means. Each aircraft and link sortie is scored by PIT instructors using a four-point scale: Unsatisfactory, Fair, Good, and Excellent. Besides these individual sortie evaluations, a standardization flying evaluation is scheduled at the end of each of the six major categories of instruction. In addition, the trainee will encounter four academic written examinations and a two-hour oral ground evaluation.

Link trainer and flying sorties are organized and combined into blocks of instruction, each with specialized tasks and skills required. Progression across the blocks of instruction is based upon the concept of "Proficiency Advancement." Each trainee is considered individually and allowed to progress based on satisfactory performance on each sortie and throughout the block. Simply put, each block of instruction has a minimum, average, and maximum number of sorties allotted. A trainee may progress acros block as long as all required training is accomplished, all standards are met, and the minimum sorties have been flown. There is no stigma attached to a trainee who requires more than the minimum number of sorties, as long as the maximum sortie limit is not exceeded.

Should a trainee encounter significant difficulty within a block or category of training, there are provisions for either additional training (with Wing DO approval) or for a progress check flight to determine the trainee's potential for further training. If a trainee fails this Initial Progress Check (IPC), he will be scheduled for a Final Progress Check (FPC). A failed FPC is grounds for elimination from training.

Daily activities are split into two sections, academic training and flight line activities. Each portion lasts approximately one-half of the duty day. The schedule alternates weekly so that during one week academics are held in the morning and flight line activities are in the afternoon; the next week, the process is reversed.

T-37 PIT

This program prepares the newly arrived pilots for instructor pilot duties in the T-37. This aircraft is built by Cessna and is a subsonic, unpressurized, side-by-side seated, basic jet trainer.

T-37 Specifications

Max Speed: 425 KIAS	Wingspan: 33 feet 8 inches
Ceiling: 25,000 MSL	Length: 29 feet 4 inches
Gross Weight: 6626 pounds	Height: 9 feet 4 inches
Max G loading: 6.67	

Academic Training

The academic program consists of classroom instruction and study in six subjects. The trainees complete one course at a time before moving on to the next course. The first section of the program includes a four-hour period for orientation and processing. Standard in-processing actions are handled, books and flying equipment are issued, and a brief welcoming social event is held. An additional four-hour period is alloted to Aviation Physiology/Egress Training. Of the remaining subjects, three include written examinations: Systems, Applied Aerodynamics, and Flight Planning. (See Appendix 2)

Flying Training

The initial flight line training program is an extremely busy time for the trainees. They will encounter many orientation briefings acquainting them with standard operating procedures, administrative practices, and training requirements. In addition, several videotape and sound-on-slide Learning Center programs must be viewed. The trainees will also spend several hours in the link trainer learning normal and emergency procedures.

Actual flying training is conducted using a building block approach. The first phase of training, the proficiency phase, is concerned with actual hands-on experience in the T-37 learning to fly in accordance with ATC standards. The contact category is primarily concerned with basic day, Visual Flight Rules (VFR), aircraft handling. Considerable emphasis is placed on traffic patterns, stalls and spins, and aerobatic maneuvers. The trainee will fly approximately 10 sorties during this portion of training. Following these sorties the trainee will face his first check ride--the Stan/Eval, Contact Proficiency Check.

Instrument training also begins early in the program. The trainee is still in the proficiency phase, and will fly approximately six sorties from the right seat under a vision restricting hood. Emphasis is centered on instrument cross check, basic maneuvers, and various instrument approach procedures including VHF Omni-directional Range (VOR), Instrument Landing System (ILS), and Ground Controlled Approaches (GCA). In addition, the trainee will fly an average of four link missions supplementing the aircraft instrument training sorties. The proficiency phase essentially concludes with the Stan/Eval Instrument Proficiency Check.

Following the primary proficiency phase the instructional phase begins in both contact and instrument categories. The workload increases significantly because the trainees must continue to sharpen their basic flying skills while adding the new dimension of verbalizing what they are doing. Trainees must recognize their own flying errors, analyze them, and offer instruction as to how to correct the deficiencies. The process requires fast thinking and keen concentration. Twelve additional contact sorties, five instrument sorties, and four link missions preceed the Stan/Eval, Contact and Instrument Instructor flight evaluations, respectively.

The formation category begins before the completion of the contact and instrument instructional categories. It starts in the same manner, with a block of four proficiency sorties. There is no proficiency check ride, so the trainees immediately transition to instructional training. As in the previous categories, primary emphasis is placed on precise flying, error analysis, and accurate instruction. Training concentrates on basic two-ship maneuvering, trail formation, and rejoins. At the end of approximately five more sorties the trainees take the Stan/Eval, Formation Instructor flight evaluation.

The last category of flight instruction in T-37 PIT is in navigation. This segment is a complex one because it combines both proficiency and instructional sorties under Instrument Flight Rules (IFR) and Visual Flight Rules (VFR). An average of nine sorties are used to accomplish training in IFR cross-country missions, day/night VFR navigation, and VFR low level navigation. An average of six supplementary link trainer sorties provide the trainees with further IFR navigation practice. The Stan/Eval, Navigation Instructor flight evaluation concludes the flying training program for T-37 PIT.

After the trainees have mastered the academic subjects and successfully completed all flight evaluations, they will take a two-hour oral ground evaluation. This oral exam covers all phases of the curriculum and essentially serves to reemphasize the importance of general knowledge and proper emergency procedure actions. Successful completion of this evaluation signals the end of PIT. The program concludes with an informal graduation ceremony and the trainee emerges as a fully qualified instructor pilot in the ENJJPT program.

T-38 PIT

The T-38 PIT program prepares newly arrived trainees to conduct advanced undergraduate jet pilot training. The aircraft is the Northrop-built T-38, Talon. Many countries around the world fly the fighter version of this aircraft--the F-5. It is a twin engine, supersonic, pressurized, tandem seated advanced trainer.

T-38 Specifications

Max Speed: 710 KIAS	Wingspan: 25 feet 3 inches
Ceiling: 50,000 MSL	Length: 46 feet 4 inches
Gross Weight: 12,500	Height: 12 feet 10 inches
Max G loading: 7.33	

Academic Training

As in the T-37 program, six academic subjects are taught. The program begins with a four-hour schedule of orientation and processing, equipment issue, and a welcoming social event. Aviation Physiology/Egress Training is the first academic course of study. The following three courses, Systems, Applied Aerodynamics, and Flight Planning comprise the core subjects of the program and have written examinations. In addition, a brief study of the Methods of Instruction and Flying Safety complete the academic schedule. (See Appendix 3)

Flying Training

The first few days of flight line activities are crowded with orientation and familiarization briefings. Also included are trips to the Learning Center to view videotape and sound-on-slide programs, and practice sessions in the link trainer. This busy schedule sets the stage for the first phase of flight instruction.

The proficiency phase involves basic aircraft transition training and consists of both contact and instrument flying. The contact portion is flown from the front seat and generally requires five aircraft sorties. These missions concentrate on basic VFR handling skills: traffic patterns and landings, stalls, aerobatics, and emergency procedures. The link trainer is used extensively to supplement cockpit familiarization and emergency procedures training. The instrument portion also averages five sorties and emphasizes basic instrument maneuvers, Tactical Air Navigation (TACAN) procedures, and various instrument approaches. These sorties are flown from the rear cockpit under a hood. In addition, four link missions allow the trainee to concentrate on maneuvers or approaches that prove to be difficult. Stan/Eval flight evaluations complete both of these initial training categories.

Following these pilot qualification check rides, the long awaited instructional phase begins. Although weather conditions may influence initial scheduling, the phase generally begins with contact instructional sorties. Because the trainees have flown only five front seat sorties, the initial block of eight sorties is designed to allow them to gain proficiency in flying from the rear cockpit. The trainees are not required to specifically practice their verbal instructional skills, but should concentrate on improving their basic flying skills and become accustomed to the limited visibility from the back seat. Mission profiles closely resemble the proficiency phase and center on the same basic VFR flight maneuvers.

Following these eight sorties the training continues into the full-fledged rear cockpit instructional block. It is in these seven missions that the trainee learns to fly and verbally instruct at the same time. Situational awareness and a keen sense of error analysis are the requisite skills of the truly effective instructor pilot. Two additional sorties are flown with the PIT instructor role-playing as an ENJJPT student pilot. He will try to make the same mistakes in judgment and commit typical student flying errors. The trainee must quickly identify and correct all errors. The final training sortie is a night, rear cockpit mission concentrating on local area orientation, traffic patterns and landings, and emergency procedures. The contact instructional category culminates with the Stan/Eval, Contact Instructor flight evaluation.

The instrument instructional category overlaps the contact instructional category. During the next several weeks the trainees could fly sorties in both categories on any given day. The instrument category is an unusual one in that its five aircraft sorties may be flown from either cockpit and there is no instructor check ride specifically for instrument instructor training. Five additional link sorties complement the training. These missions are conducted with the trainees alternately flying instrument profiles and instructing from the console position. Primary emphasis remains on building the trainees' flying proficiency while developing their verbal instructional skills.

The formation category starts roughly two weeks into the instrument category. As one can imagine, the trainees begin to encounter a full mix of instruction in all three flying categories. The formation category is separated into two major sections, two-ship and four-ship. The two-ship section begins with a single front seat familiarization sortie which orients the trainees with aircraft formation references and basic training maneuvers. For approximately the next seven sorties the trainees encounter a proficiency segment which develops their skills in basic two-ship maneuvering, trail formations, rejoins, and tactical maneuvers. The following five sortie segment is devoted to developing instructional abilities. Situation awareness, error analysis, and energy maneuvering are the keys to successful formation instruction. The two-ship segment ends with a Stan/Eval, Formation Instructor check ride.

The four-ship segment was recently expanded in the training sylabus as a result of increased emphasis on safety and a desire for better trainee proficiency. It is a relatively short segment, and includes only four sorties. It is challenging in that it significantly increases the complexity of the training environment. Even some of the most experienced fighter pilots find it difficult to build instructional skills while monitoring three other aircraft during complex tactical maneuvers. Heavy emphasis is placed on flight planning, tactical maneuvers, and rejoin procedures. This segment also concludes with a Stan Eval check ride.

The last major instructional category is navigation. Like the T-37 program, it is a complex category because it combines several elements of proficiency, instruction, low level VFR navigation, IFR cross country and out-and-back missions in a single grouping. The average trainee requires seven sorties to complete the category. Unfamiliarity with USAF and Federal Aviation Administration regulations may initially cause some confusion for our international trainees. Extensive training and in-depth briefings are conducted, however to proclude any serious difficulties with these regulations and procedures. The Flight Planning course also addresses procedural requirements in detail. The category concludes with a two-sortie combination, navigation and instrument, Stan/ Eval flight evaluation.

The final requirement for graduation is the two-hour oral ground evaluation. This examination essentially covers all categories in the curriculum and serves to reemphasize the trainees' grasp of general knowledge, student training practices, and emergency procedures. Once the trainees have passed this examination they are graduated and assigned to flights in the 90th Flying Training Squadron as full-fledged T-38 Instructor Pilots.

Chapter Five

UNDERGRADUATE PILOT TRAINING

Like the PIT program, ENJJPT UPT is a high pressure, fast-paced curriculum of flight training. It is designed to qualify students from the participating Euro-NATO countries as pilots capable of flying high speed jet fighter-type aircraft. This fighter pilot theme is central to the entire course of instruction. It is important to remember that ENJJPT is the sole source of fighter pilots for several European nations--Denmark, the Netherlands, and the Federal Republic of Germany.

The program is a long and arduous one involving over 250 hours of classroom academic subjects, 260 flying hours, and 225 hours of ground training, officer development, and physical training. The course of study lasts 55 weeks and includes three major phases: Preflight, T-37 Flying Training, and T-38 Flying Training. This chapter will offer a brief discussion of each phase and its major components, explain student progression requirements, and review elimination criteria.

PREFLIGHT

Although the shortest phase (only 17 days), the Preflight Phase is an extremely busy period for the newly arrived students. They encounter typical in-processing administrative procedures, receive their personal equipment and books, take physical examinations, and begin the first segment of academic study.

Each class is split into two sections of approximately 15 to 20 students each. This section organization permits an alternating schedule of classrooms, training facilities, and later on allows for the optimum utilization of aircraft and flight training airspace.

Academically, the students begin their studies with Aerospace Physiology and T-37 Life Support. The course lays down a basic foundation in the physiology of flight and acquaints the students with the physical stress factors in flying. It also includes two altitude chamber flights, ejection seat training, an orientation to the T-37 life support equipment, as well as basic survival instruction. As in all academic courses, it concludes with a comprehensive written examination.

T-37 FLYING TRAINING

Each section of students is assigned to a specific flight in the 89th Flying Training Squadron for flight line training. In this phase the students spend roughly half of their training day engaged in flight line activities and half in the academic classroom. The two sections in a class are on opposing schedules, so that while one section is flying the other is in academics. Remember that there are four complete classes of students in training in the T-37 at all times. This alternating schedule is necessary because of the limited number of flying areas and classrooms.

Academics

The academic program consists of classroom study and instruction in seven separate subjects. The students complete one course at a time before moving on to the next course. Each subject includes a one or two hour written examination (See Appendix 4 for course descriptions). The academic half of the day normally consists of two to three hours of classroom instruction with an additional one or two hours of physical training and/or officer development instruction.

Flying Training

Flight line activities consist of a myriad of training events in several different categories and media. Essentially, the categories involve aircraft mission types: Contact, Instrument, Formation, and Navigation. Media events define the mode of training: aircraft, link, ground training/procedural briefings or Learning Center programs.

Initially, the program is heavily loaded in ground training and procedural briefings. Several link trainer missions are also included for cockpit and aircraft familiarization. The frequency of ground training lessons slows after the first few weeks of training and picks up again when a new category of training is introduced or the students encounter difficulty within a particular category of training or media.

Contact.

Flying training begins with the contact category and includes instruction in basic aircraft handling. Traffic patterns and landings, stalls and spin recoveries, basic aerobatics, and area planning are of primary interest. The student will complete his first solo after approximately 13 hours of dual instruction.

Following solo, the students must refine their skills and will face their first check ride, the Initial Proficiency Check. After this check ride the students must rapidly attain proficiency in advanced aerobatic maneuvers while maintaining their skill in the basics. The Final Contact Check, administered late in the T-37 phase, tests the students' skills in all areas of day VFR aircraft handling.

Instruments.

The instrument training category consists of a total of 23 aircraft sorties and 18 link trainer missions. The schedule begins with a few basic sorties conducted early in training to orient the students in the fundamentals of instrument flying. As training continues, increased emphasis is placed upon precision flying and instrument approach procedures.

While the students gain confidence and proficiency, they are challenged further by the complexities of the IFR cross country block of instruction. In this block the students will fly six aircraft and four link trainer sorties specifically designed to acquaint them with IFR navigation techniques and strange field instrument approach procedures. Primary emphasis is placed on VOR, ILS, and GCA procedures. The students complete the category with a comprehensive flight check and oral exam covering all aspects of the instrument training program.

Navigation.

The navigation category is a relatively short program of eight sorties including a check ride. Its primary purpose is to lay the foundation of low level VFR navigation skills, which are vital to success in the European fighter aircraft environment. Although training is conducted at 1000 feet above ground level, the students are sufficiently challenged by narrow timing criteria and a reasonably complex route structure. In addition, one of these low level sorties must be flown solo.

Formation.

T-37 formation training involves a 14 sortie program in which two sorties are flown solo. This is a "fundamentals" training category and consists of two-ship flying only. The students learn the basics of fingertip, route, and trail formations, wing takeoffs and landings, rejoins, and in-flight planning.

As in the other categories, a final check ride measures students' performance through a sampling of a representative cross section of all maneuvers introduced. It is very important for the students to gain a clear understanding of energy maneuvering and the two key principles of flexibility and planning. These skills will be put to the test in the T-38 formation category.

T-38 FLYING TRAINING

After successful completion of the T-37 phase the students are assigned to flights in the 30th Flying Training Squadron. Here again, the students retain their section organization as an additional four classes are in T-38 training at all times. The same split schedule of academics and flight line activities continues into this phase.

Academics

The students face six academic courses in the T-38 phase (See Appendix 4). Because there are fewer courses and fewer hours of classroom instruction in this phase, the students actually complete the academic curriculum several weeks before flying activities are finished.

Even though the time spent in academics is less, the scope and difficulty of the courses remain at a high level. Each course terminates with a written examination. In addition, the students are required to successfully complete the pilot's Annual Instrument Examination--the same exam that their IPs take before their annual instrument flying evaluations.

Flying Training

The same essential categories and media types exist in the T-38 phase as in the T-37 phase. The first few days are crowded with briefings, Learning Center programs, and link missions. In fact, the early part of training has been related to "drinking water from a fire hose." This, of course, means that there is far more material presented than one can comfortably absorb. The flying program is extremely fast-paced and begins with the contact category.

Contact.

Contact training stresses the same basic handling skills in the T-38 aircraft, but the training time is compressed considerably. The student will fly only 11 sorties before his first solo flight and must achieve a safe level of proficiency in all traffic pattern work, stalls, and much of the advanced aerobatic maneuvers. Following the first solo, only nine training sorties remain prior to the only contact check ride in the T-38 phase.

Contact training does not conclude with the check ride, however. An additional eight sorties are evenly distributed throughout the remainder of the program. These sorties allow the students to maintain their contact proficiency while they are engaged in training in the other categories. Furthermore, a three sortie night flying program (one sortie is solo) also qualifies the student in night contact flying.

Instrument.

The instrument category consists of 23 aircraft sorties and 18 link missions. It begins early in training, during presolo contact flying. Initially, the major goals are to develop a rapid and accurate instrument cross check and precise basic aircraft control. Advanced maneuvers and instrument approaches are introduced after the first six aircraft sorties and six link missions.

The remainder of the instrument category concentrates heavily on IFR navigation and instrument approaches. Tactical Air Navigation (TACAN), ILS, and GCA approaches are emphasized during approach training. As in the T-37 phase, many cross country and out-and-back missions are scheduled. Normally, the student will fly as many as six sorties gaining experience in flying approaches to airfields outside the local area. The instrument category concludes with a two-sortie, out-and-back check ride which offers an extremely challenging profile.

Formation.

The formation category is by far the most extensive training category in the T-38 phase. It consists of 40 sorties divided into two major segments: two-ship and four-ship. Although basic maneuvers and fundamentals are stressed early in the category, the syllabus also calls for training in the advanced techniques of tactical maneuvering, night formation flying, and low level navigation.

The two-ship training program involves 30 sorties and includes a comprehensive check ride. As in the T-37 phase, fingertip, trail, and rejoin techniques form the basis of instruction. Energy and situation awareness are critical concepts as the students learn high-speed, high-G maneuvering. Additionally, the syllabus stresses wing takeoffs, and formation approaches and landings. As the program progresses, two-ship tactical training gradually forces student awareness in three dimensional maneuvering techniques and in-flight planning. The two-ship check ride samples a representative cross section of all maneuvers introduced in the category.

Following the check, the students progress into four-ship training. Although only ten sorties in length, the four-ship program significantly challenges student capabilities. Four-ship fingertip formations, rejoins, and tactical maneuvers are notably more complex and require precise aircraft control and expanded situational awareness. The four-ship check ride requires satisfactory performance in both lead and wingman positions. Each student flies a portion of the check ride profile as the formation leader or element leader. The students then change positions so that the previous leaders become wingmen within their elements.

Navigation.

Navigation training involves a broad spectrum of subjects including low level VFR navigation, medium altitude VFR navigation, VFR cross country navigation, day/night VFR navigation, and a solo IFR out-and-back mission. The entire category is comprised of 13 training sorties and includes a check ride in low level VFR navigation.

Typically, the schedule of training is somewhat disjointed. The nine low level missions generally occur very late in the phase and are often the last sorties in the UPT program. The day/night and solo out-and-back sorties are usually flown somewhat earlier in training, as they complement the instrument training category.

STUDENT PROGRESSION REQUIREMENTS AND ELIMINATION CRITERIA

Academic Performance

The student must complete every academic course with a passing grade. Should a student fail an exam, the student must retake it and meet the minimum passing score to proceed further in training. Any student who fails three academic examinations will meet a faculty board unless the Wing DO personally waives the requirement. The faculty board will recommend whether or not the student should be eliminated from training.

Flying Performance

The entire daily evaluation system is based upon the student achieving and maintaining desired proficiency standards within specified periods of time or blocks of training. Student proficiency is measured on a four point scale: Unable (Unsatisfactory), Fair (Safe), Good (Satisfactory), and Excellent. Each block of training has associated proficiency standards specified for each maneuver. As a student continues in training the proficiency standards generally increase. For example, the proficiency standard for a barrel roll during the first block of instruction in aerobatics is "Unable. This means the student need not be able to fly the maneuver correctly or safely. The next block may require a "Fair" or "Safe" level. The final block would ultimately require a "Good" or "Satisfactory" level. The term "Excellent" implies the student flew the maneuver correctly, efficiently, and skillfully. The maximum required proficiency standard for all phases and categories of training is "Satisfactory."

Once a student reaches the required proficiency standard he must maintain it on subsequent flights. A single dip in performance for an event is normally allowed (unless the student drops below a safe level), but an additional consecutive regression justifies a reduction in the overall mission grade for that flight. A third consecutive regression dictates an overall mission grade of Unsatisfactory--the student fails the particular mission or sortie.

Should a student fail to reach required proficiency standards in the alloted number of sorties, he must be given an overall grade of Unsatisfactory. In this case, the sortie is repeated. The student may repeat a sortie for this reason no more than two consecutive times.

After any three consecutive unsatisfactory missions, the student's flight commander normally directs the student to an Initial Progress Check (IPC). If the student passes the IPC he is returned to normal syllabus training. Should the student fail, however, he will be recommended for a Final Progress Check (FPC). Again, if the student passes the FPC, normal syllabus training continues. If he fails, he must face a faculty board which considers him for elimination from training.

Elimination Criteria

The rules governing student eliminations are basically very simple. A student may be eliminated for any of the following reasons:

1. Unsatisfactory flying performance
2. Unsatisfactory academic performance
3. Disciplinary problems
4. Manifestations of apprehension (fear of flying)
5. Physical disqualifications
6. Self Initiated Elimination

As already pointed out, a failed FPC or a third academic failure dictate a faculty board review. The faculty board essentially reviews the student's records to determine if training standards were maintained, and the student had a fair chance to succeed. If no unusual circumstances can be found, the faculty board generally recommends to the Wing Commander that the student be eliminated. The final authority is the Wing Commander--his decision stands.

Chapter Six

THE BIG PICTURE

The Euro-NATO Joint Jet Pilot Training program is a tremendously energetic and dynamic effort. Every nation that sends students pays its fair share of the over $90 million annual budget. The 80 FTW has 175 assigned aircraft and in 1985 flew 72,000 sorties, or nearly 90,000 flying hours. The combined training airspace including T-37 and T-38 areas and low level routes consists of about 12,000 square miles.

It is an expensive program; no simulators are used, and no shortcuts are taken in training NATO's future fighter pilots. In 1985, the average ENJJPT graduate cost $430,000 to train. Nevertheless, the participating members are very happy with the results. Many do not have their own indigenous pilot training programs. Others desire the economic and military advantages of a true joint training program. Whatever the reason, ENJJPT is working.

The 80FTW has proven that we can train jointly, at reduced overall costs, while increasing standardization and interoperability. The end result guarantees enhanced readiness for all NATO allies. Pilots who train together, live together, speak a common language, and understand each other can better fight together if ever called upon to do so.

APPENDIX 1

YOUTH CENTER ACTIVITIES

Facilities

TV and Reading Lounge
Games and Equipment Check-out
Crafts and Music Activities Room
Gymnasium

Youth Sports Programs

Little League Baseball
T-Ball
Softball
Football
Basketball
Tennis
Golf

Instructional Classes

Swimming Lessons
Tap and Ballet Dance Lessons
Gymnastics
Baton
Karate
Tennis Clinics
Golf Clinics

APPENDIX 2

T-37 PIT SUMMARY

A. Academic Training	Hours of Instruction
Orientation and Processing	4
Aviation Physiology/Egress	4
Aircraft Systems*	16
Applied Aerodynamics*	11
Flight Planning*	23
Methods of Instruction	14
Flying Safety	1
	73

* Indicates written exam

B. Synthetic Trainer (Average)	
Normal/Emergency Procedures	8.4
Instrument Training	11.2
Navigation	8.4
	28.0

C. Aircraft Training (Average)	
Contact-includes 2 check rides	32.6
Instrument-includes 2 check rides	18.2
Formation-includes 1 check ride	14.3
Navigation-includes 1 check ride	16.9
	82.0

APPENDIX 3

T-38 PIT SUMMARY

A. Academic Training	Hours of Instruction
Orientation and Processing	4
Aviation Physiology/Egress	4
Aircraft Systems*	17
Applied Aerodynamics*	11
Flight Planning*	22
Methods of Instruction	14
Flying Safety	1
	73

*Indicates written exam

B. Synthetic Trainer (Average)	
Normal/Emergency Procedures	7.5
Instrument Training	15.0
Navigation	3.0
	25.5

C. Aircraft Training (Average)	
Contact-includes 2 check rides	29.9
Instrument-includes 1 check ride	15.3
Formation-includes 2 check rides	22.8
Navigation-includes 1 check ride	12.0
	80.0

APPENDIX 4

ENJJPT SUMMARY

	Hours of Instruction
A. Preflight Phase	
Orientation and Processing	28
Aviation Physiology/Life Support*	48
	76
B. T-37 Phase	
1. Academics	
T-37 Systems*	25
Principles of Flight*	13
T-37 Instrument Procedures*	25
T-37 Navigation*	24
T-37 Flight Planning*	28
Weather*	20
Aircraft Accident Prevention	2.5
	137.5
2. Synthetic Trainer	
Procedures (Normal/Emergency)	5.6
Instrument Training	23.4
	29.0
3. Ground Training Lessons	
Briefings/Readings/Learning Center	16.1

4. Aircraft Training

	Dual	Solo	Total
Contact	45.9	14.7	60.6
Instrument	32.9	--	32.9
Navigation	9.1	1.3	10.4
Formation	16.3	2.8	19.1
	104.2	18.8	123.0

5. Miscellaneous	
Officer Development	13.5
Physical Training	67.5
	81.0

C. T-38 Phase

	Hours of Instruction
1. Academics	
T-38 Aviation Physiology	6
T-38 Systems*	20
T-38 Instrument Procedures*	16
Applied Aerodynamics*	22
T-38 Flight Planning*	16
Low Level Navigation	5
Annual Instrument Exam	6
	91
2. Synthetic Trainer	
Procedures (Normal/Emergency)	7.0
Instrument Training	23.4
	30.4
3. Ground Training Lessons	
Briefings/Readings/Learning Center	16.1

4. Aircraft Training

	Dual	Solo	Total
Contact	27.5	11.0	38.5
Instrument	32.1	--	32.1
Formation	39.0	13.0	52.0
Navigation	12.0	2.4	14.4
	110.6	26.4	137.0

5. Miscellaneous	
Officer Development	13.5
Physical Training	67.5
	81.0

*Indicates examination in the course

APPENDIX 5

EMJJPT ATTRITION

	FLYING	ACAD	MEDICAL	SIE	MOA	OTHER	TOTAL
Belgium	1	0	0	0	0	0	1
Denmark	2	0	0	0	0	0	2
Germany	61	0	7	4	1	1	74
Italy	2	0	0	0	0	0	2
Netherlands	25	1	2	1	1	1	31
Norway	4	0	1	2	0	0	7
Turkey	0	0	1	0	0	0	1
U.K.	1	0	0	0	0	1	2
U.S.	44	0	1	6	3	2	56
TOTAL	140	1	12	13	5	5	176

ACAD = Academics
SIE = Self Initiated Elimination
MOA = Manifestations of Apprehension (Fear of Flying)

Figures shown in parentheses indicate total students entered by the country shown.

Data is accurate as of Aug 85

APPENDIX 6

PROJECTED ENJJPT STUDENT INPUTS

COUNTRY	FY 86	FY 87
Belgium	0	0
Canada	0	0
Denmark	4	10
Germany	78	85
Greece	0	0
Italy	20	20
Netherlands	31	28
Norway	20	18
Portugal	0	0
Turkey	2	2
United Kingdom	6	6
United States	131	131
TOTAL	292	300

Data is accurate as of Aug 85

APPENDIX 7

1985 INSTRUCTOR PILOT FORCE

Belgium	4
Canada	1
Denmark	23
Germany	51
Greece	6
Italy	7
Netherlands	17
Norway	13
Portugal	2
Turkey	1
United Kingdom	3
United States	157
TOTAL	285